PROGRESS MONITORING SYSTEM FOR STUDENT FINAL YEAR PROJECT

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ABSTRACT

Final Year Project (FYP) is an integral part of University education, and an important one. It is the time that student work on a significant assignment in term of size and difficulties, and it is also the platform to equip them with practical skills to work on future projects in the industry. Despite for all of its good intentions, the approach for managing students' project is outdated, if not archaic. Key issues in FYP such as tracking project progress and accurate assessment are often difficult to manage. The objective of this paper is to present the process of Progress Monitoring System for Student Final Year Project (PMS). It is based on existing process regarding to solve a problem of monitoring FYP student. User requirement is the best way to implement in the future process. RAD model has been chosen for development PMS. So, the system can helps the online review documentation for student FYP in more efficient ways.

ABSTRAK

Projek Tahun Akhir (PSM) adalah merupakan sebahagian daripada pendidikan Universiti dan merupakan kajian yang penting. Ia merupakan tugasan akhir bagi pelajar dan merupakan platform untuk kemahiran praktikal pada masa akan datang dalam industri. Walaupun pendekatan menguruskan projek pelajar adalah lama, ia tidak kuno. Isu utama yang dibincangkan dalam FYP adalah proses pemantauan pelajar bagi menyiapkan tugasan yang diberikan. Jadi, objektif thesis ini adalah untuk membincangkan Sistem Pemantauan Kemajuan Pelajar Projek Tahun Akhir (PMS). Ia adalah berdasarkan kajian proses yang sedia ada untuk menyelesaikan masalah pemantauan pelajar FYP. Mengetahui keperluan pengguna adalah langkah terbaik untuk diimplement dalam proses yang baru.Model Rad digunakan dalam pembangunan PMS. Jadi, system ini boleh membantu para pelajar menyiapkan thesis mengikut piawai yang ditetapkan oleh pihak FYP dengan lebih cekap.

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LIST OF ABBREVIATIONS

1	FYP	Final Year Project
2	FSKKP	Faculty System Computer and software Engineering
3	PHP	Hypertext Pre Processor
4.	PMS	Progress Monitoring System for Student Final Year Project

PART 1

INTRODUCTION

1.0 Introduction

Project monitoring is a significant part of project management. All project activities should be carefully monitored while the project is being accomplished. This helps project manager to keep informed of work progress, and apply timely correctives. It is essential that project monitoring is simple and not time-consuming. Project monitoring software may really help to simplify this process. First, it is necessary to define project goals and plan the activities (Swapna, 2001).

Nowadays, project monitoring will implemented and will use for final year project's student. The purpose of this implemented because to achieve the goal of project undergraduate's subject in university. This way, it helps to track student if they are have problem to finish their project. The step for approach student totally different for each supervisor. So, the best way to keep track student is through web based system. Before this, data and information for FYP is recorded as manually. Staffs need to record all data and information and keep all information in files. Recorded as manually will make the data and information lost. This is not consistent in order to find old record or data. It may cause waste of time when want to search any information.

The Progress Monitoring System for Student Final Year Project (PSM) is computer software which helps student contacts of University Malaysia Pahang (UMP) under Faculty System Computer and Software Engineering (FSKKP) gain better control of their project planning and implementation through keeping student connected with supervisor, regardless of where student are located. Supervisor in FSKKP can monitor every detail, simply, and easily. However the system is about managing projects from remote destinations. So that, this system helps student to complete projects, keep within budget, stay on track, and collaborate with supervisor.

Therefore, the Progress Monitoring system for Student FYP allows its student to easily update project problems as they arise. Those update project problem, actually they are will get the feedback from supervisor. So, Supervisor will evaluate the progress and assign marks to student based on rubric. This system also can helps student streamline the project management process, helping to keep student on track and providing user with reports and real-time data so that their project success is assured.

The software will be used to develop this system is Macromedia Dreamweaver. The language used is PHP. For the database we will use MySQL, Apache and web server XAMP.

1.1 Problem Statement

Nowadays, every third year of the graduate under FSKKP, each third year student has to be assigned a project which she/he has to work on it and submit it till the end of the year. During the year, the student has also to submit various products that show the progress in his/her workings. The report each student has to submit are two (Research Report and Full Report). What the instructor (supervisor) has to do is to assess these products by completing special assessment forms regarding each product.

Based on observation from Andrew Hadiyonto, student has lack experience and insight. They often fail to estimate the time required to complete their task (Andrew Hadiyonto, ISATE 2011). They also failed to understand the whole process in completing the task. They are unable to determine accurately the current status of their project. Besides that, student may not have time to meet their supervisor. So that, many of them are often behind schedule without realizing it and can't achieve the goal of FYP.

Normally, during supervision phase, students have to organize meeting with their supervisor to show their weekly process on the project. Log book is compulsory to record all meeting between student and supervisor . Thus, it is difficult to manage students. All students will miss communication in order to achieve the good product. It is not easy to keep student connected with supervisor. One of the supervisor's tasks in final year project is to track each student's progress. One of the reason students fail to

meet their supervisor because they are busy with their schedule and their time are limited. In addition, supervisor has one or more students to manage and hard to supervisor divided time to meet students. As a result, they cannot do corrections on their works to be submitted and will get lower marks for their project.

Besides that, review process is currently done manually. It is difficult and requires a long time to find files and information stored. All handle in manual activities. On evaluation phase also, evaluator will give marks to students based on their presentation. All marks will recorded in form provided. Once, the form is missing or damage, the mark will be lost. This process requires a lot of man power and there is also no privilege on student's information. After recording the marks, all evaluators are responsible to key in the mark in excel format and email it to PSM/PTA coordinator. So for maximum effectiveness, the review process needs undergo a formal review by using computerize system. So with this system, it will help users as it makes the software project smoother and easier.

1.1.1 Objectives

This project embarks the following objectives:

1. To complete the final year project using systematic approach.
2. Completion with full repository and complete requirement following the timeline.
3. Evaluate the progress and assign marks based on rubric

1.2 Existing System

Nowadays, many supervisors take an interest in the ways in which effective communication systems can facilitate contact between supervisors and their students. The ease of use of electronic mail likes Instant Messaging and Facebook for communication and of resource access via the World Wide Web means that students can complete a research having never left their home environment or having never met their supervisor.

There are some existing systems that use web-based application to manage their system:

1. Managing Student Final Year Projects with Redmine
2. Clarizen's Project Management Software
3. The Design and Implementation of Online Management System for Undergraduates' Thesis (Project)
4. Nanyang Technological University Final Year Project Portal
5. Web-Based Evaluation System for Online Courses and Learning Management Systems
6. Online Document Management system for Academic Institutes

Table 1.1: Comparison Existing System

Existing System	**Respondent**	**Software/ Technique/ Platform**	**Result**
Managing Student Final Year Projects with Redmine	University FYP undergraduate students	Web development, Ms Access or Ms SQL	The system provides all the guidance and improvement for student final year project.
Clarizen's Project Management Software	Team member that involve in project management	Web development, Ms Access or Ms SQL	The system provides solution offers users instant gratification with all aspects of online project progress.
The Design and Implementation of Online Management System for Undergraduates' Thesis (Project)	System administrators, teachers, students and auditors	Web development ASP.NET, Ajax, SQL Server	Improvement of teaching management and the teaching quality
Nanyang Technological University Final Year Project Portal	University FYP undergraduate students	Web development ASP.NET	The system provides all the guidance and details on FYP to

			guide undergraduate students to develop their FYP
Web-Based Evaluation System for Online Courses and Learning Management systems	The approximately 200 students of this course together with four instructors and two administrators	Web development	Implementing a monitoring system of the students' learning behaviour and a consulting system based on the students' results.
Online Document Management System for Academic Institutes	160 students in the Faculty of University of Malaya	PHP5, JSP and MY SQL programming languages	Provide a collection of coordination pathways and interfaces to remove the problems of document access

1.2.1 Research and relationship to current project

1. Managing student Final Year Projects with Redmine

Redmine has an *update* feature whereby an issue can be "updated" to reflect any problems and findings associating with the specific assigned task. The essential process for it to work is unpretentious. Each student will be given an *issue* (essentially a *task*) Corresponding to their name by either from the supervisor or a teammate, with an estimated date of completion. Once a new *issue* is submitted, all corresponding parties are able to track this task to determine whether it meets the estimated completion deadline or not.

One of the supervisor's tasks in FYP is to track each student's progress. There have already been some reasonably good systems put in place for this. In the initial part of the project, each FYP team is required to *plan* the entire project duration using *Microsoft Project.* The plan would include each task such as design, development and testing.

Students are required to create a *Gantt chart* for it. A Gantt chart is a type of bar chart that exemplifies a project schedule. It illustrates the start and finish dates of the terminal elements as well as the summary elements of a project. The intention of the Gantt chart is to help the FYP team to plan their work accordingly.

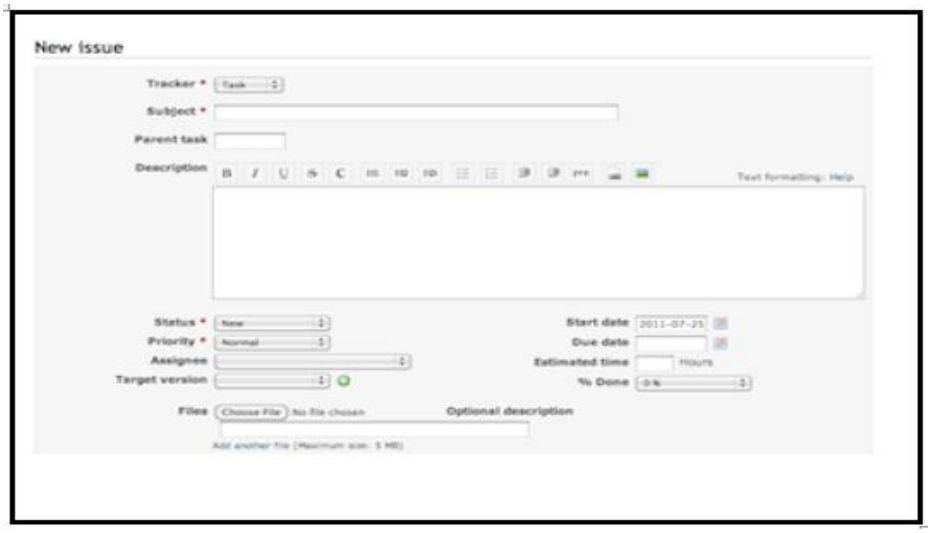

Figure 1.1: Creating a new issue in Redmine

2. Clarizen's Project Management Software

Clarizen's online project management solution offers users instant gratification with all aspects of online project scheduling – planning, resource load, task updates, scheduling conflicts and milestone progress. This enables project managers to react quickly and easily to all changes in the system without having to wait for team members to "save" or "update" their entries and additions.

Instantly view scheduling dependencies and conflicts – any change made to any project will be instantly updated in the project scheduling view - enabling you to manage these changes and make adjustments as needed

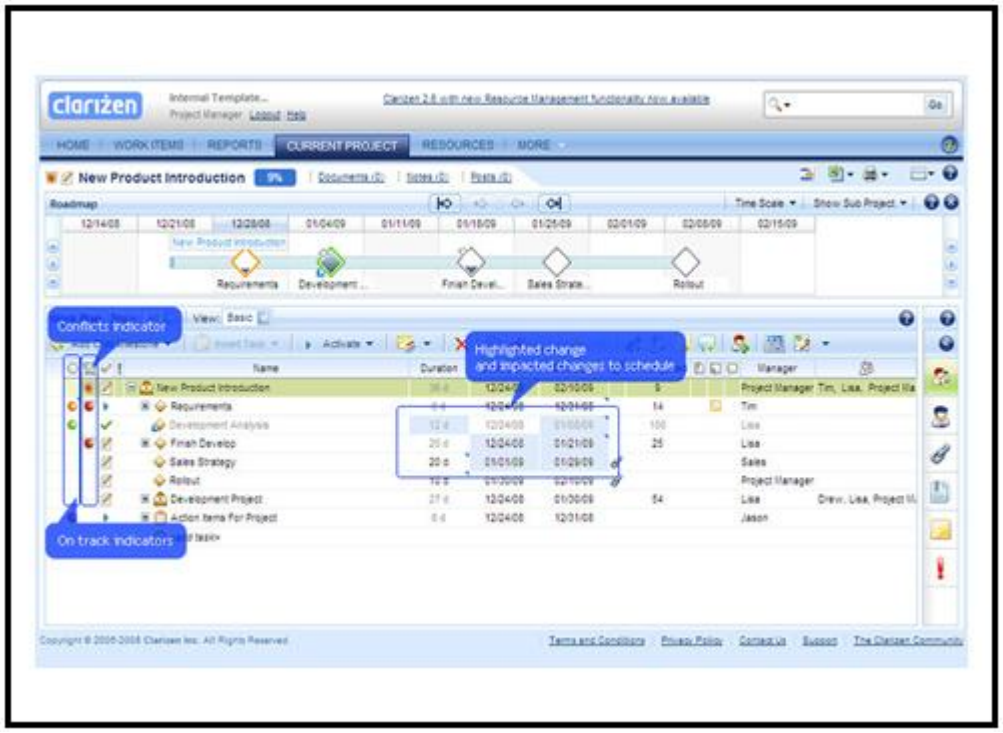

Figure 1.2: Instantly view and manage scheduling conflicts

3. The Design and Implementation of Online Management System for Undergraduates' Thesis (Project)

This system are develop based on online management system for undergraduate's thesis, which is of great practical for improvement of teaching management and quality. The system uses ASP.Net, SQL Server for its development, including four types of users: system administrators, teachers, students and auditors. The paper describes the responsibilities of the four categories of users, workflow, design ideas, and discusses some design methods to enhance the security of the system. The system has been widely promoted in some schools of Huaibei Normal University and achieved good results.

4. Nanyang Technological University Final Year Project Portal

This system provides all the guidance and details on FYP to guide undergraduate students to develop their final year project.

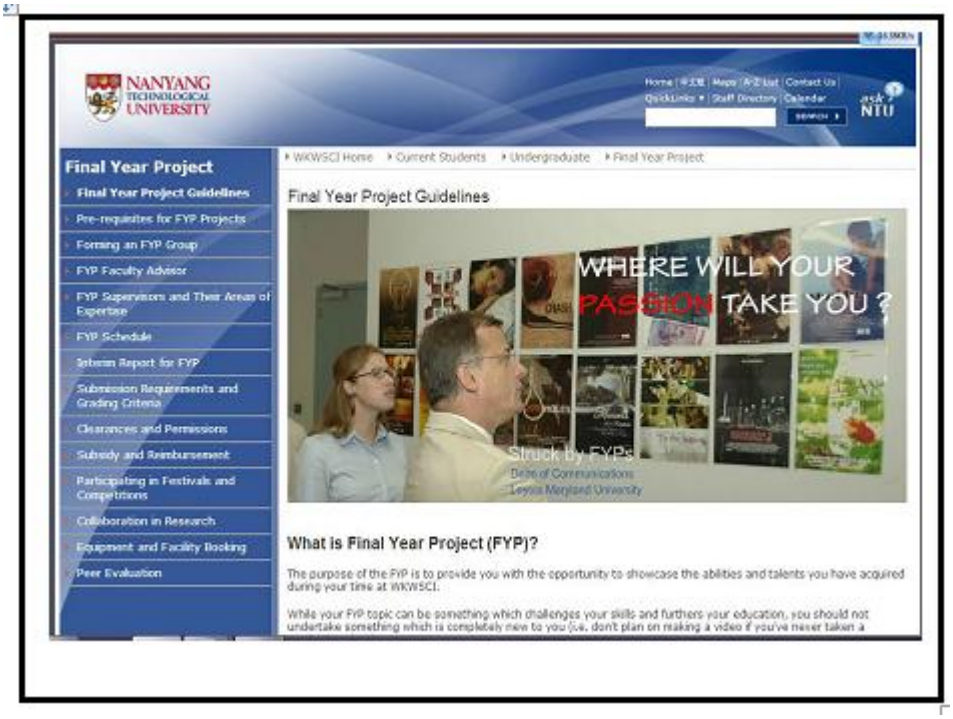

Figure 1.3: Nanyang Tecnological University FYP Portal

5. Web-Based Evaluation for Online Courses and Learning Management System

This system focus on the Web-based evaluation framework of online courses and learning management system (LMS), based on Web-based questionnaires that are directed at different target groups for the course contents and the design of the LMS as well as the Web site. The evaluation criteria are described in more detail and are included in Web-based questionnaires.

6. Online Document Management System for Academic Institutes

Provide a collection of coordination pathways and interfaces to remove the problems of document access. This system was develop using PHP, JSP and MYSQL. The respondent in the system require 160 students in the Faculty of University of Malaya.

1.2.2 Comment on existing system

All the systems develop using a web application on platform in order to be accessed by everyone on different places, and it is much easier to apply evaluation, especially when involves a large number of respondents. Most of the system used ASP.NET to develop the GUI of the system. Thus, PHP is the better development programming language as it open source and can be implemented on all platform. From the previous system, it is much more focus on providing guidelines and final submission. Based on my observation, monitoring through online communication must implement in the system. It is can help the FYP process more effective and efficiency.

When comparing PMS with others system, functionality of the system should be consider. The first function in the system are generate report and update project problems. This function is quite important because if the system not provide this function, it can cause problem and the system will become complicated. Not all the system provides the function like PMS. PMS allows student get the feedback from

supervisor. Thus, PMS is an automated solution for FYP student problem. The online progress log feature is provided for students to keep updating the progress. This progress is dates and timed. The supervisor can also put feedback or comments on the progress. This can also be used for online discussion on aspects of the project.

1.3 Current System

Currently, process throughout the undergraduate project is done by manually. PSM coordinator used this current manual process to manage the subject activities such as review report, marks calculation, etc. The following flowchart will describe the process in completing the undergraduate project.

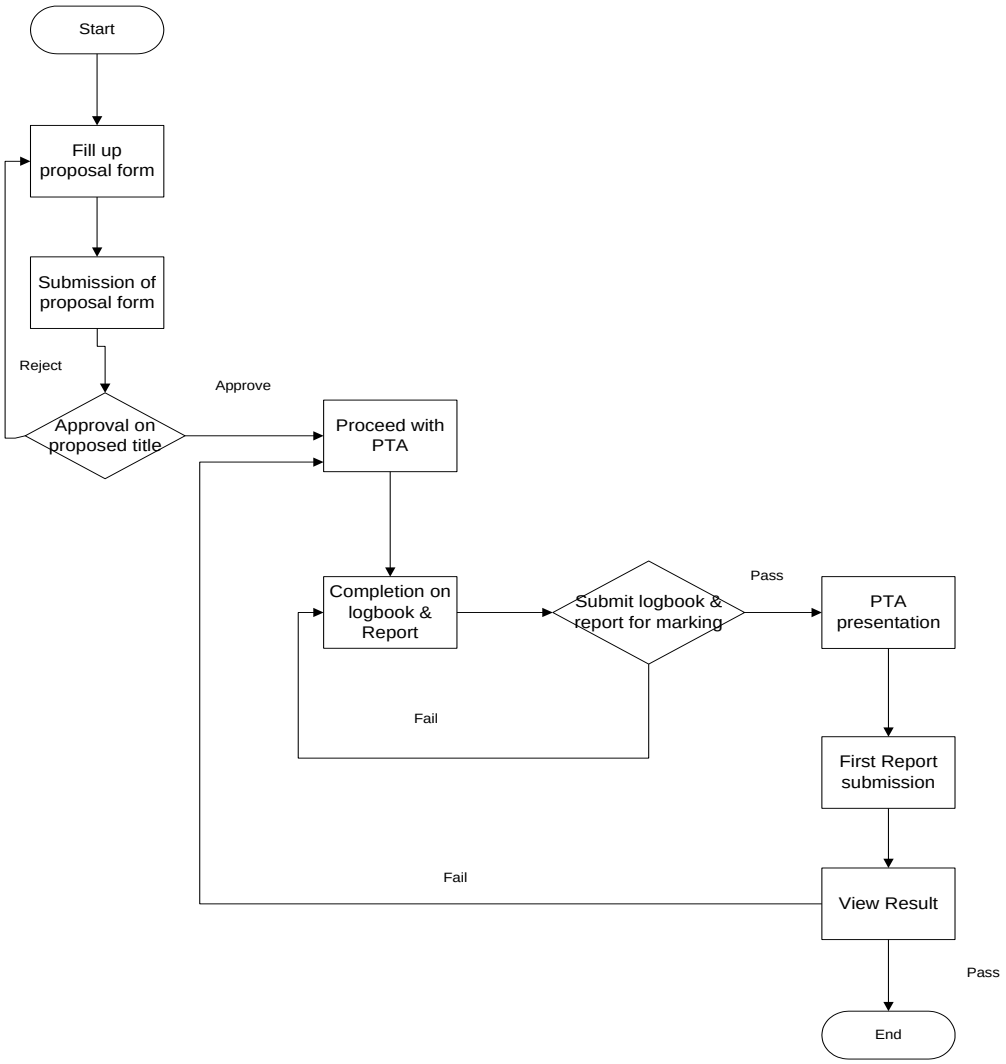

Figure 1.4 : PTA current manual process flow chart

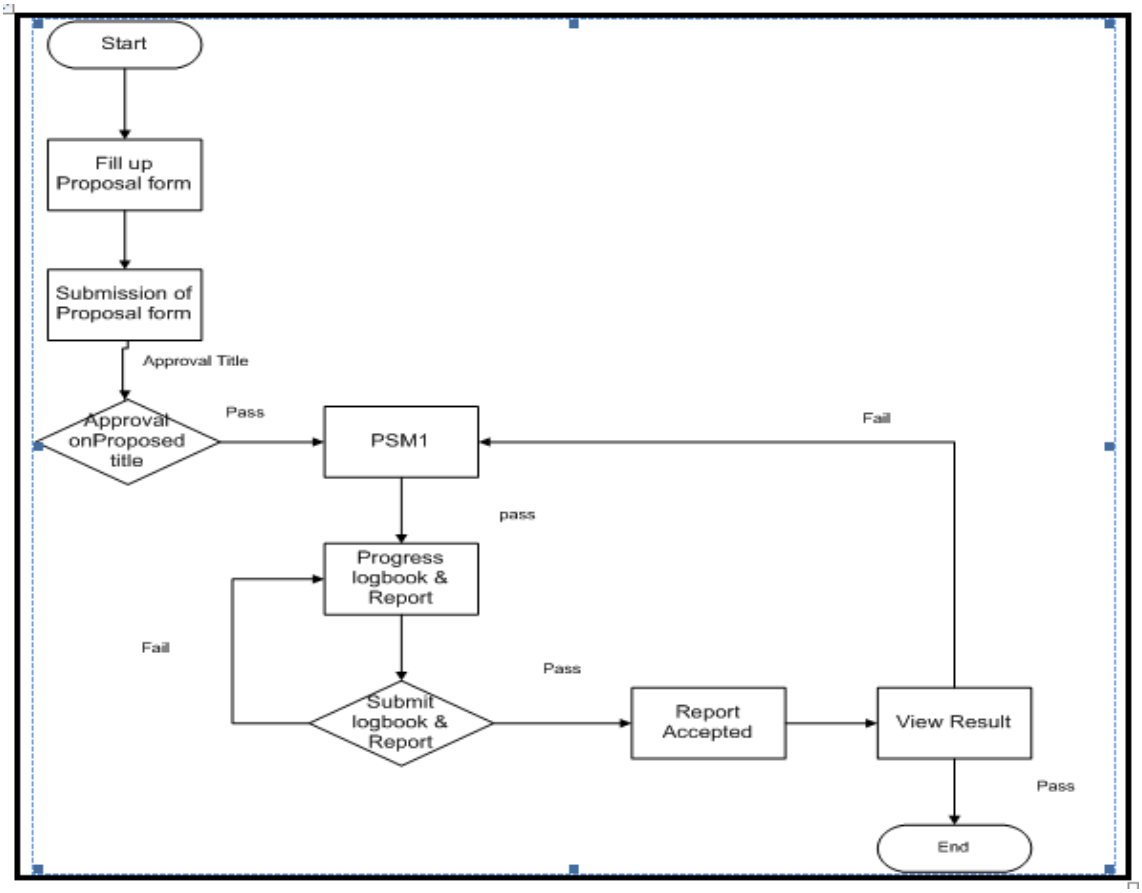

Figure 1.5 : PSM1 current manual process flow chart

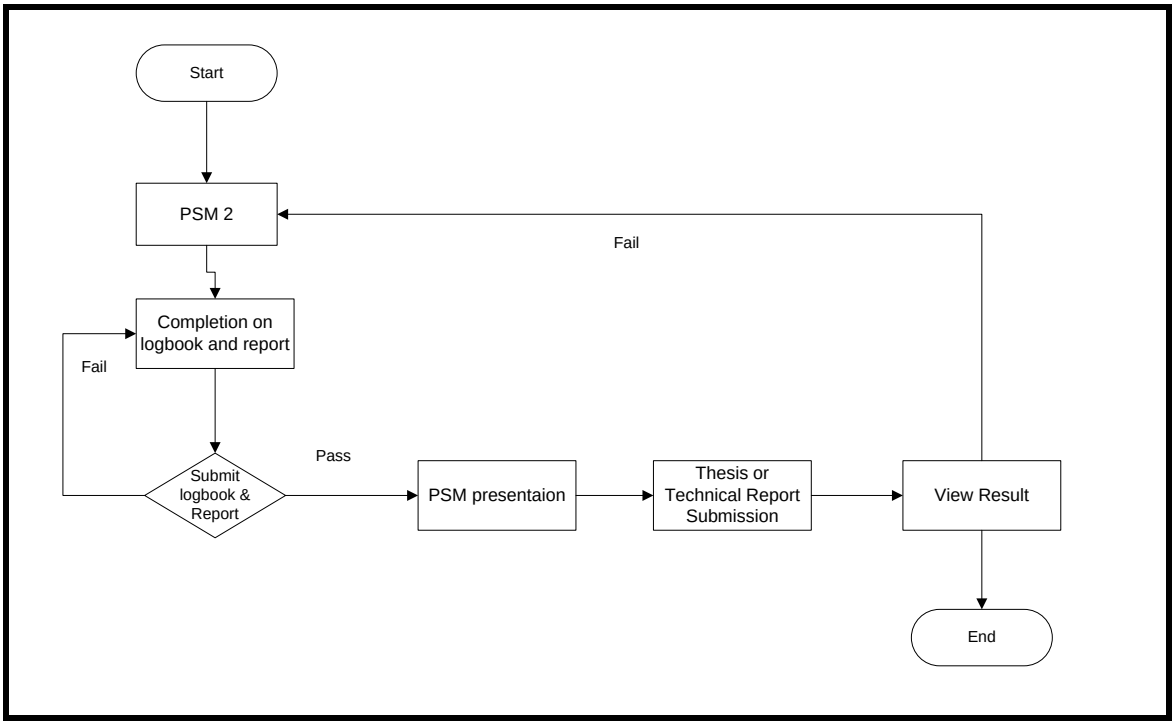

Figure 1.6 : PSM2 current manual process flow chart

1.3.1 Limitation

1. Weekly Evaluation by Supervisor
2. Process for evaluate student too complicated.
3. The report of the FYP can be lost and damage.
4. Miss communication between student and supervisor.

1.3.2 Solution

By using PMS, students can update their logbook at any time via a paperless, environmentally-friendly method as well as submit their logbook and final report through online. Supervisors can access the student's logbook at any time, therefore they can evaluate and grade the student at their own page. Student can submit their report and get feedback from their supervisor. Supervisor will assign marks to students on their progress and performance during presentation. After that, student able to check their result. The result will generate automatically.

1.4 Terminology

Table 1.2: List of Terminology

CSV	comma separated value
DML	Data Manipulate Languge
FSKKP	‘Fakulti Sistem Komputer dan Kejuruteraan Perisian’ or Faculty of Computer System and Software Engineering
PMS	Progress Monitoring System
FYP	Final Year Project
PSM	"Projek Sarjana Muda"
PTA	"Projek Tahun Akhir"
RAD	Rapid Application Development
SQL	Structured Query Language
UMP	Universiti Malaysia Pahang